

REMARKS

In response to the Office Action mailed August 22, 2006, Applicants respectfully request reconsideration. To further the prosecution of this Application, Applicants submit the following remarks, have canceled claims, have added new claims, and have amended claims. The claims as now presented are believed to be in allowable condition.

Claims 1-28 were pending in this Application. By this Amendment, claims 3-4, 9, 11-12, 17, 20, 22, 24-25 and 27 have been canceled. Applicants expressly reserve the right to prosecute at least some of the canceled claims and similar claims in one or more related Applications. Claims 29-37 have been added. Claims 8, 10, and 16 have been amended. Accordingly, claims 1-2, 5-8, 10, 13-16, 18-19, 21, 23, 26, and 28-37 are now pending in this Application. Claims 1, 2, 10, and 18 are independent claims.

Independent claim 10 has been amended to recite subject matter similar to that recited in claim 25. No new matter has been added, and no new search is required.

Rejections under §103

Claims 2, 5-7, 10, 13, 15, and 23 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,365,658 (Freeman, et al.) in view of U.S. Patent No. 6,435,916 (Amberg, et al.). Claims 1, 18-19, 26, and 28 were rejected under 35 U.S.C. §103(a) as being unpatentable over Freeman in view of Amberg, in further view of U.S. Patent No. 5,842,030 (Larabell, et al.). Claims 8 and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Freeman in view of Amberg, in further view of U.S. Patent No. 6,411,526 (Nguyen, et al.).

No basis for the rejection of claims 14 and 21 has been provided in the Office Action.

Applicants respectfully traverse each of these rejections and requests reconsideration. The claims are now in allowable condition.

Freeman discloses a modular coupler 74 for connecting two cables 90, 84 to each other (Figure 2). The coupler 74 receives a first modular plug 86, attached to an end of cable 84, within a first aperture 82, and a second modular plug 92, attached to an end of cable 90, within a second aperture 88 (Figure 2). The modular coupler 74 positions within a receiving aperture 72A, which is located on a faceplate 68 (Figure 2 and Column 9, line 64 through Column 10, line 5). Locking tabs 78 and seating tabs 80 secure the modular coupler 74 within the receiving aperture 72A (Figure 2 and Column 10, lines 5-10). The modular coupler 74 is further depicted in Figure 10, where it is called modular coupler 16. Modular coupler 16 contains terminal assemblies 211 which electrically connect the modular plugs (e.g., 86, 92) through conductive portion 211C (Figure 10 and Column 13, lines 24-33).

Amberg discloses a snap-mounted electrical power connector for a printed circuit board (Abstract). The power connector 100 comprises an input power receptacle 101 and an output power receptacle 102, both contained within a single housing 103 (Column 3, lines 7-10). Internal and external power cords connect to the power receptacles 101, 102 (Column 3, lines 14-23).

Larabell discloses a power supply subsystem for use in a system such as a memory storage system (Abstract). Such a system is shown in Figure 1 of Larabell.

Nguyen discloses a power cord set 100 including an elongated body 105 (Column 3, lines 44-47 and Figures 1A, 1B, 2A and 2B). Located about the elongated body 105 of the integrated coupling device 100 is a flange 150 (Column 3, lines 53-57). The elongated body 105 is generally composed of a plastic material such as a polycarbonate or polyamide nylon (Column 3, lines 61-

62). This is advantageous because it permits the power cord set 100 to be molded with any or all of the various structural embodiments of the invention molded therein (Column 3, lines 63-65).

Claims 10 and 13-16

Claim 10 (which as currently amended is substantially identical to canceled dependent claim 25) is directed to a device for fastening a plug of a power cord to a frame which is configured to support a power supply. The device has a body configured to attach to an installation location of the frame and *substantially hold the plug at the installation location of the frame when the power supply connects with and disconnects from the plug*. The body includes a first end wall, a second end wall, and lateral walls which connect the first end wall and the second end wall together. When the body substantially holds the plug at the installation location of the frame and when the body is attached to the installation location of the frame, (i) the first end wall is configured to restrain the plug in a positive Z-direction relative to the frame, (ii) the second end wall is configured to restrain the plug in a negative Z-direction relative to the frame, the negative Z-direction being opposite to the positive Z-direction along a Z-axis, and (iii) the lateral walls are configured to register the plug relative to the frame in an X-Y plane which is perpendicular to the Z-axis. The plug of the power cord and the body of the device are separate components. The body of the device is *configured to capture the plug in an interference fit manner and present a physical connection interface of the plug to the power supply for direct physical mating between the physical connection interface of the plug and the power supply* when the device fastens the plug to the frame.

The cited references do not teach or suggest, either alone or in combination, a device *configured to capture the plug in an interference fit manner and present a physical connection interface of the plug to the power supply for*

direct physical mating between the physical connection interface of the plug and the power supply when the device fastens the plug to the frame. Rather, Freeman teaches a modular connector 74 which receives modular plugs 86, 92 within apertures 82, 88. There is no suggestion that the modular plugs 86, 92 directly physically mate with each other within modular connector 74. Indeed, as depicted in Figure 10, the apertures 196, 202 within modular connector 16 are not adjacent one another, and the modular plugs connect only by means of terminal assemblies 211 (Column 13, lines 14-23). Therefore, Freeman specifically teaches away from a *direct physical mating*. In addition, Freeman makes no mention of an *interference fit*. The Office Action, on page 10, asserts that Freeman as modified by Amberg teaches a device body “being configured to capture the first plug (92) in an interference fit manner and present a physical connection interface of the first plug (92) for direct physical mating,” however, the Office Action does not provide a basis for this statement. Indeed, it appears to be incorrect, as discussed above. Furthermore, the prior art does not teach or suggest connecting a plug to a power supply with a device positioned at a frame, nor would this be obvious in view of Freeman and Amberg. Even if one were to combine the teachings of Freeman and Amberg, both Freeman and Amberg only teach means for connecting two cables, but neither one teaches or suggests connecting the plug of a cable to a power supply.

For the reasons stated above, claim 10 patentably distinguishes over the cited references. Accordingly, the rejection of claim 10 under 35 U.S.C. §103(a) should be withdrawn and claim 10 is now in allowable condition.

Because claims 13-16 depend from and further limit claim 10, claims 13-16 are in allowable condition for at least the same reasons.

Additionally, it should be understood that the dependent claims recite additional features which further patentably distinguish over the cited prior art.

For example, claim 13 recites wherein the body includes a *first member* and a *second member* which are *configured to allow the plug to become encapsulated* when in an open position relative to each other, and encapsulate the plug when in a closed position relative to each other. This feature is not taught or suggested by the prior art. The Office Action suggests, on page 9, that body 16 of Freeman has a first and second member. However, there does not appear to be any basis for this assertion. Indeed, modular connector 16 does not appear to be made up of two members. Even if modular connector 16 were to be made from two members (and Freeman does not suggest this), there is absolutely no indication in Freeman that the two members could be *configured to allow the plug to become encapsulated* when in an open position relative to each other, and encapsulate the plug when in a closed position relative to each other. In fact, Freeman does not work that way. In Freeman, plugs 86, 92 may be inserted into the modular connector 74 merely by pushing a plug 86, 92 into an aperture 82, 88 of the modular connector 74 – not by encapsulating the plug within a device when two members close around it. If the rejection of claim 13 is to be maintained, Applicants respectfully request that it be pointed out with particularity where the cited prior art teaches two members configured in such a manner.

As another example, claim 16, as amended, recites *wherein the entire device is formed of a non-conductive material*. This feature is not taught or suggested by the prior art. Freeman does not teach or suggest that the modular connector 74 is entirely formed of a non-conductive material. Nguyen does teach a power cord set 100 including an elongated body 105 (Column 3, lines 44-47 and Figures 1A, 1B, 2A and 2B). The elongated body 105 is generally composed of a plastic material such as a polycarbonate or polyamide nylon (Column 3, lines 61-62). However, it would not be obvious to combine this feature of Nguyen with the device of Freeman. Indeed, Freeman specifically teaches away from this

when it teaches that modular connector 16 contains conducting member 211C (Column 13, lines 24-36). Thus, there are additional distinguishing features.

Claims 2, 5-8, and 23

Claim 2 is directed to a power cord assembly having, a power cord and a device for fastening the first plug to a frame which is configured to support a power supply. The power cord has a *first plug configured to connect to the power supply*, a second plug configured to connect to the power source, and a cable interconnected between the first and second plugs. The device includes a body configured to attach to an installation location of the frame and substantially hold the first plug at the installation location of the frame when the power supply connects with and disconnects from the plug. The body includes a first end wall, a second end wall, and lateral walls which connect the first end wall and the second end wall together. When the body substantially holds the first plug at the installation location of the frame and when the body is attached to the installation location of the frame, (i) the first end wall is configured to restrain the plug in a positive Z-direction relative to the frame, (ii) the second end wall is configured to restrain the first plug in a negative Z-direction relative to the frame, the negative Z-direction being opposite to the positive Z-direction along a Z-axis, and (iii) the lateral walls are configured to register the first plug relative to the frame in an X-Y plane which is perpendicular to the Z-axis.

The cited references do not teach or suggest, either alone or in combination a power cord assembly with a power cord *having a first plug configured to connect to a power supply*. Rather, Freeman teaches a modular connector 74 which receives modular plugs 86, 92 within apertures 82, 88. There is no teaching or suggestion that the modular plugs 86, 92 are configured to connect directly either to a power supply or even to each other. The Office Action neglects to mention how the prior art teaches this feature. If the rejection of claim

2 is to be maintained, Applicants respectfully request that it be pointed out with particularity where the cited prior art teaches such a power cord assembly with a power cord *having a first plug configured to connect to a power supply*.

For the reasons stated above, claim 2 patentably distinguishes over the cited prior art, and the rejection of claim 2 under 35 U.S.C. §103(a) should be withdrawn. Accordingly, claim 2 is in allowable condition.

Because claims 5-8 and 23 depend from and further limit claim 2, claims 5-8 and 23 are in allowable condition for at least the same reasons. Additionally, it should be understood that the dependent claims recite additional features which further patentably distinguish over the cited prior art. For example, claims 5 and 8 recite similar subject matter to that recited in claims 13 and 16. Therefore, claims 5 and 8 are allowable for similar reasons as claims 13 and 16, as discussed above.

As another example, claim 23 recites similar subject matter to that recited in claim 10 (as amended). Therefore, claim 23 is allowable for similar reasons as claim 10, as discussed above.

Claims 1, 19 and 21

Claim 1 is directed to a data storage system having, a frame, operating circuitry supported by the frame, and a power subsystem configured to power the operating circuitry. The power subsystem includes (i) a *power supply configured to be supported by the frame*, and (ii) a power cord assembly for connecting a power supply to a power source. The *power cord assembly has a power cord which includes a first plug configured to connect to the power supply*, a second plug configured to connect to the power source, and a cable interconnected between the first and second plugs; and a device configured to fasten a first plug to a frame. The device includes a body configured to attach to an installation location of the frame and substantially hold the first plug at the installation

location of the frame when a power supply connects with and disconnects from the plug. The body includes a first end wall, a second end wall, and lateral walls which connect the first end wall and the second end wall together. When the body substantially holds the first plug at the installation location of the frame and when the body is attached to the installation location of the frame, (i) the first end wall is configured to restrain the plug in a positive Z-direction relative to the frame, (ii) the second end wall is configured to restrain the first plug in a negative Z-direction relative to the frame, the negative Z-direction being opposite to the positive Z-direction along a Z-axis, and (iii) the lateral walls are configured to register the first plug relative to the frame in an X-Y plane which is perpendicular to the Z-axis.

As mentioned above in connection with claim 2, the cited references do not teach or suggest, either alone or in combination, such a power cord assembly with a power cord *having a first plug configured to connect to a power supply*. Therefore, the cited references do not teach or suggest a system having such a power cord assembly, as recited in claim 1. Thus, claim 1 patentably distinguishes over the cited references for similar reasons as set forth in connection with claim 2.

In addition, the cited references do not teach or suggest, either alone or in combination, a *power supply configured to be supported by the frame*. The Office Action does not cite any prior art as having such a feature. If the rejection of claim 1 is to be maintained, Applicants respectfully request that it be pointed out with particularity where the cited prior art teaches such a *power supply configured to be supported by the frame*.

Accordingly, the rejection of claim 1 under 35 U.S.C. §103(a) should be withdrawn and claim 1 is in allowable condition.

Because claims 19 and 21 depend from and further limit claim 1, claims 19 and 21 are in allowable condition for at least the same reasons. Additionally, it

should be understood that the dependent claims recite additional features which further patentably distinguish over the cited prior art. For example, claim 21 recites limitations similar to those recited in claim 10. Therefore, claim 21 is allowable for similar reasons as is claim 10, as discussed above.

As another example, claim 19 recites wherein the body includes a *first member and a second member* which are *configured to allow the plug to become encapsulated* when in an open position relative to each other, and encapsulate the plug when in a closed position relative to each other. As discussed above in connection with claim 13, this feature is not taught or suggested by the prior art. Thus, there are additional distinguishing limitations.

Claims 18, 26 and 28

Claim 18 is directed to a method for installing a power supply into a data storage system. The method includes fastening a device to a plug of a power cord, and attaching the device to an installation location of a frame of the data storage system. The method further includes inserting a power supply into the frame of the data storage system until the *power supply mates with the plug of the power cord*. The device has a first end wall, a second end wall, and lateral walls which connect the first end wall and the second end wall together. When the device substantially holds the plug at the installation location of the frame and when the device is attached to the installation location of the frame, (i) the first end wall is configured to restrain the plug in a positive Z-direction relative to the frame, (ii) the second end wall is configured to restrain the first plug in a negative Z-direction relative to the frame, the negative Z-direction being opposite to the positive Z-direction along a Z-axis, and (iii) the lateral walls are configured to register the first plug relative to the frame in an X-Y plane which is perpendicular to the Z-axis.

The cited references do not teach or suggest, either alone or in combination, a method including the step of inserting a power supply into the frame of the data storage system until the *power supply mates with the plug of the power cord*. Freeman teaches inserting modular plugs 86, 92 into a modular connector 74, as discussed above, but nowhere does Freeman teach that these modular plugs 86, 92 mate with each other within modular connector 74. Indeed, as depicted in Figure 10, the apertures 196, 202 within modular connector 16 are not adjacent one another, and the modular plugs connect only by means of terminal assemblies 211 (Column 13, lines 14-23). Therefore, Freeman specifically teaches away from mating. Furthermore, the prior art does not teach or suggest connecting a plug to a power supply with a device positioned at a frame, nor would this be obvious in view of Freeman and Amberg. Even if one were to combine the teachings of Freeman and Amberg, both Freeman and Amberg only teach connecting two cables, but neither one teaches or suggests connecting the plug of a cable to a power supply. For the reasons stated above, claim 18 patentably distinguishes over the cited prior art, and the rejection of claim 18 under 35 U.S.C. §103(a) should be withdrawn. Accordingly, claim 18 is in allowable condition.

Because claims 26 and 28 depend from and further limit claim 1, claims 26 and 28 are in allowable condition for at least the same reasons. Additionally, it should be understood that the dependent claims recite additional features which further patentably distinguish over the cited prior art. For example, claim 28 recites limitations similar to those recited in claim 10. Therefore, claim 21 is allowable for similar reasons as is claim 10, as discussed above.

As another example, claim 19 recites wherein the body includes a *first member and a second member* which are *configured to allow the plug to become encapsulated* when in an open position relative to each other, and *encapsulate the plug* when in a closed position relative to each other. As discussed above in

connection with claim 13, this feature is not taught or suggested by the prior art. Thus, there are additional distinguishing limitations.

Newly Added Claims

Claims 29-37 have been added and are believed to be in allowable condition. Claims 29-30 depend from claim 1. Claim 31 depends from claim 2. Claim 32 depends from claim 5. Claim 33 depends from claim 10. Claim 34 depends from claim 13. Claims 35-37 depend from claim 18. Support for claims 29 and 35 is provided within the Specification, for example, on page 9, lines 7-10. Support for claims 30-34 and 36 is provided within the Specification, for example, on page 11, lines 6-23. Support for claim 37 is provided within the Specification, for example, on page 5, lines 16-17. No new matter has been added.

Conclusion

In view of the foregoing remarks, this Application should be in condition for allowance. A Notice to this affect is respectfully requested. If the Examiner believes, after this Amendment, that the Application is not in condition for allowance, the Examiner is respectfully requested to call the Applicant's Representative at the number below.

Applicants hereby petition for any extension of time which is required to maintain the pendency of this case. If there is a fee occasioned by this Amendment, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50-3661.

If the enclosed papers or fees are considered incomplete, the Patent Office is respectfully requested to contact the undersigned collect at (508) 616-2900, in Westborough, Massachusetts.

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Respectfully submitted,


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